

## **REMARKS / ARGUMENTS**

### **I. General Remarks and Disposition of the Claims**

Please consider the application in view of the following remarks. Applicants thank the Examiner for the careful consideration of this application including the references that Applicants have submitted in this case.

At the time of the Office Action, claims 42-61 were pending in this application. Claims 42-61 were rejected in the Office Action. By this paper, claims 42, 45, 49, 51, 55, and 58 have been amended. These amendments are supported by the specification as filed. All the amendments are made in a good faith effort to advance the prosecution on the merits of this case. It should not be assumed that the amendments made herein were made for reasons related to patentability. Applicants respectfully request that the above amendments be entered and further request reconsideration in light of the amendments and remarks contained herein.

### **II. Remarks Regarding Rejections Under 35 U.S.C. § 103(a)**

#### **A. Claims 42-48 and 55-60 over *Nguyen* in view of *Lee* and *Still***

Claims 42-48 and 55-60 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,209,643 to Nguyen et al. (hereinafter "*Nguyen*") in view of U.S. Patent No. 6,817,414 to Lee et al. (hereinafter "*Lee*") and U.S. Patent No. 7,166,560 to Still et al. (hereinafter "*Still*"). Applicants respectfully disagree. In order for a reference or combination of references to form the basis for a rejection under § 103(a), a *prima facie* case of obviousness must be established. Obviousness is determined by construing the scope of the prior art, identifying the differences between the claims and the prior art, determining the level of skill in the pertinent art at the time of the invention, and considering objective evidence present in the application indicating obviousness or nonobviousness. *Graham v. John Deere*, 383 U.S. 1, 17 (1966). The United States Supreme court has identified a number of rationales under which a *prima facie* case of obviousness may be established. See *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 1731 (2007). Each rationale is directed towards identifying known elements in the prior art. See MPEP § 2143. Applicants respectfully submit that due to the differences between the claims as currently amended and the cited references, the Examiner has not established a *prima facie* case of obviousness,

in that the combination of *Nguyen*, *Lee*, and *Still* does not establish that each limitation of the present claim was known in the prior art.

*Nguyen* does not discuss "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 and 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. The Examiner does not dispute this fact but rather indicates that *Nguyen* discloses that a liquid or solution of a tackifying compound can contain a solvent. See Office Action at 4. The Examiner separately argues that the treatment chemical in *Nguyen* is the equivalent of the acid-releasing degradable material of the present application. *Nguyen* would therefore need to disclose that the treatment chemical, not the liquid or solution of a tackifying compound, is combined with a solvent and/or plasticizer to disclose the limitation in independent claims 42, 49, and 55. *Nguyen* does not disclose that the treatment chemical is ever combined with a solvent and therefore does not disclose this limitation.

Further, *Nguyen* does not disclose "wherein the acid-releasing degradable material comprises a material that is substantially water insoluble" as required by amended independent claims 42, 49, and 55. Rather, *Nguyen* specifically requires that the treatment chemical be "a desired solid treatment chemical which exhibits solubility in the formation fluids upon contact therewith." *Nguyen*, col. 4, ll. 34-36 (emphasis added). Further, the treatment chemical may comprise "substantially any other chemical which is soluble in the fluids in the formation at the temperature conditions within the formation within which it is placed." *Id.* at col. 4, ll. 44-46 (emphasis added). In addition, the Examiner recognizes that the treatment chemical is soluble by stating that the treatment chemical "is dissolved by the fluids present in the formation to provide the desired treatment." Office Action at 5 (emphasis added). Therefore, *Nguyen* does not disclose this limitation as required by claims 42, 49, and 55.

*Lee* does not account for the shortcomings of *Nguyen*. First, *Lee* does not disclose "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 and 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. Further, *Lee* indicates that the

"polymeric form of alpha-hydroxy acids, once formed and *re-dispersed in water*, can slowly hydrolyze and release an acidic by-product." *Lee* col. 3, ll. 20-22. Thus, *Lee* indicates that the polymerized alpha-hydroxycarboxylic acid is water soluble and cannot therefore meet the limitation "wherein the acid-releasing degradable material comprises a material that is substantially water insoluble" as required by amended independent claims 42, 49, and 55.

*Still* suffers from the same deficiencies as *Nguyen* and *Lee*. *Still* does not disclose "combining an acid-releasing degradable material with a solvent or a plasticizer to create a coating solution" as required by independent claims 42 and 49, or "combining an acid-releasing degradable material with a plasticizer to create a coating solution" as required by independent claim 55. The lack of any disclosure of an acid-releasing degradable material with a solvent or a plasticizer is not surprising as *Still* does not teach coating the solid-acid precursors on any materials, but rather these materials are included as solid components in various shapes. See *Still* col. 6, ll. 9-12. *Still* also indicates that the solid-acid precursors are water soluble. For example, *Still* indicates that "it is believed that an intact surface of the solid acid-precursor is comparatively insoluble, but that when the surface is disrupted by the removal of a small amount of material subsequent dissolution of additional material from that surface is easier." *Still* at col. 4, ll. 21-25. Thus, *Still* does not disclose the limitation "wherein the acid-releasing degradable material comprises a material that is substantially water insoluble" as required by amended independent claims 42, 49, and 55.

The Examiner states that the disclosure of either solid acid-precursors that are liquid at wellbore temperatures or "soluble liquid additives" in *Still* teach the limitation of a plasticizer in claim 55. Applicants submit that nothing in *Still* teaches that these compositions would act as plasticizers. For the solid acid-precursors, the ability to plasticize the acid-releasing degradable material, if possible, would only function above the melting point of the cited materials, which the Examiner states would occur at wellbore temperatures. Applicants note that not all wellbores are above the stated melting temperatures. Further, the particulates can be coated prior to being placed in the subterranean formation and may not be above the temperatures indicated in the Office Action at the time the coating takes place. For the soluble liquid additives, there

is nothing to indicate that any of these components would act as plasticizers. The fact that some of these compounds "may" act as plasticizers in some situations—an assertion the Applicants dispute—"is not sufficient to establish the inherency of that characteristic." See MPEP §2112. The MPEP instead requires "a basis in fact and/or technical reasoning . . . that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Id.* To the extent that the Examiner is relying on information within the Examiner's personal knowledge, Applicants respectfully request that the Examiner cite a reference as documentary evidence in support of the position that the listed compounds would make polymers in a fracturing fluid more flowable or provide an affidavit to the same effect in accordance with MPEP § 2144.03 and 37 C.F.R. 1.104(d)(2).

With respect to dependent claim 48, the Examiner alleges that the limitation is optional. Applicants respectfully disagree. Specifically, the limitation is not optional because claim 48 requires the acid-releasing degradable material to comprise a poly(orthoester). Applicants request that the limitation be given the proper patentable weight during prosecution.

Applicants note that the Examiner has specifically listed claims 52, 53, and 54 in the rejection but has not indicated that these claims are rejected over the combination of *Nguyen, Lee, and Still*. See Office Action at 3 (stating that "Claims 42-48 and 55-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al (US 6,209,643) in view of Lee et al (US 6,817,414) and Still et al (US 7166560)" and thus excluding claims 49-54 from the rejection). Applicants respectfully request that these claims either be indicated as being rejected over these references or that the reference to any of claims 49-54 be removed from the rejection over *Nguyen* in view of *Lee* and *Still*.

Therefore, Applicants submit that claims 42-48 and 55-60 are not obviated by the combination of *Nguyen, Lee, and Still*. Accordingly, Applicants respectfully request withdrawal of this rejection with respect to claims 42-48 and 55-60.

**B. Claims 42-48 and 55-60 over *Nguyen* in view of *Lee* and *Still*, and further in view of *Murphrey***

Claims 42-48 and 55-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, and further in view of U.S. Patent No. 4,829,100 to Murphrey et al. (hereinafter "*Murphrey*").

In order for a reference or combination of references to form the basis for a rejection under § 103(a), the reference or combination of references must establish that every limitation of the claim was known in the prior art. As discussed above in Section II.A., the combination of *Nguyen*, *Lee*, and *Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. *Murphrey* fails to render obvious the deficiencies of *Nguyen*, *Lee*, and *Still*. Rather, the Examiner merely relied on *Murphrey* for its alleged teaching that "particulate material utilized in the performance of packing procedures or as a proppant material in fracturing treatments can be coated rapidly and continuously by admixing in a stream (on-the-fly) . . . instead of batch mixing which requires a period of time . . ." Office Action at 9-10. Claims 43-48 and 56-60 depend, either directly or indirectly, from claims 42 and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-48 and 55-60 are patentable over the combination of *Nguyen*, *Lee*, *Still*, and *Murphrey*. See 35 U.S.C. § 112 4 (2004). Accordingly, for at least these reasons, Applicants respectfully request withdrawal of this rejection with respect to claims 42-48 and 55-60.

**C. Claims 42-48 and 55-59 over *Nguyen* in view of *Lee* and *Still*, and further in view of *McDougall*.**

Claims 42-48 and 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, and further in view of U.S. Patent No. 5,192,615 to McDougall et al. (hereinafter "*McDougall*").

In order for a reference or combination of references to form the basis for a rejection under § 103(a), the reference or combination of references must establish that every limitation of the claim was known in the prior art. As discussed above in Section II.A., the combination of *Nguyen*, *Lee*, and *Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. *McDougall* fails to render obvious the deficiencies of *Nguyen*, *Lee*, and *Still*. Rather, the Examiner merely relied

on *McDougal* for its alleged teaching that "generally a fracturing fluid comprises a viscous or gelled polymeric solution, a propping agent, a chemical breaker and other additives commonly used in fracturing fluid . . . , friction-reducing agents such as small amounts of high molecular weight linear polymers such as polyacrylamide . . ." Office Action at 10. Applicants note that to the Examiner appears to be indicating that simply combining any of the components of *McDougal* with a fluid used in a fracturing operation would meet the limitations of the claims. However, the claims are specific as to what components are combined and cannot therefore be taught by simple additives in a fluid, where they may or may not combine with any of the other components. Claims 43-48 and 56-60 depend, either directly or indirectly, from claims 42 and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-48 and 55-60 are patentable over the combination of *Nguyen*, *Lee*, *Still*, and *McDougal*. See 35 U.S.C. § 112 4 (2004). Accordingly, for at least these reasons, Applicants respectfully request withdrawal of this rejection with respect to claims 42-48 and 55-60.

**D. Claims 42-61 over Nguyen in view of Lee and, and further in view of Mikos**

Claims 42-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nguyen* in view of *Lee* and *Still*, and further in view of PCT Publication No. WO 9425079A1 to *Mikos et al.* (hereinafter "*Mikos*"). For convenience, instead of WO 9425079A1, the Examiner refers to US 6,689,608 of the same patent family.

In order for a reference or combination of references to form the basis for a rejection under § 103(a), the reference or combination of references must establish that every limitation of the claim was known in the prior art. As discussed above in Section II.A., the combination of *Nguyen*, *Lee*, and *Still* fails to establish that every limitation of independent claims 42 and 55 was known in the prior art. *Mikos* fails to render obvious the deficiencies of *Nguyen*, *Lee*, and *Still*. Rather, the Examiner merely relied on *Mikos* for its alleged teaching that "a synthetic polymer which degrades in a controlled manner by hydrolysis include polyglycolic acid, polylactic acid, polyorthoester, polyanhydride, or copolymers thereof." Office Action at 11. Applicants note that *Mikos* describes the degradation products as "harmless metabolites" and therefore disagree with the

Examiner that "it is well known in the art that all these polymers hydrolyze with the release of an acid." Applicants respectfully request that the Examiner cite a reference as documentary evidence in support of the position that all compounds falling within the listed genus descriptions would hydrolyze with the release of an acid or provide an affidavit to the same effect in accordance with MPEP § 2144.03 and 37 C.F.R. 1.104(d)(2).

Claims 43-48, 50-54, and 56-60 depend, either directly or indirectly, from claims 42 and 55 and therefore include all the limitations of those independent claims, respectively. Thus, claims 42-48 and 55-60 are patentable over the combination of *Nguyen, Lee, Still, and Mikos*. See 35 U.S.C. § 112 4 (2004). Accordingly, for at least these reasons, Applicants respectfully request withdrawal of this rejection with respect to claims 42-48, 50-54, and 55-60.

#### **E. Prior Art Made of Record**

Applicants note that the Examiner has referred to U.S. Publication No. 2004/0175691 to Brown *et al.* (hereinafter "Brown") to show that a class of biodegradable polymers can be used for controlled release of drugs. Applicants note that *Brown* has a filing date of April 8, 2004 while the present application has a filing date of December 15, 2003. As such, *Brown* is not a proper prior art reference and cannot be used to reject the claims of the present application or to show the state of the art at the time of the invention. As such, Applicants respectfully request that the Examiner withdraw *Brown* from consideration.

#### **III. Request for Evidentiary Support**

Once again, should any of the above asserted rejections be maintained, Applicants respectfully request appropriate evidentiary support. Additionally, if the Examiner is relying upon "common knowledge" or "well known" principles to establish the rejection, Applicants request that a reference be provided in support of this position pursuant to MPEP § 2144.03. Furthermore, to the extent that the Examiner maintains any rejection based on an "Official Notice" or other information within the Examiner's personal knowledge, Applicants respectfully request that the Examiner cite a reference as documentary evidence in support of this position or provide an affidavit in accordance with MPEP § 2144.03 and 37 C.F.R. 1.104(d)(2).

#### IV. No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the cited references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

#### SUMMARY

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that no fees are due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefore, and direct that any additional fees be charged to McDermott Will & Emery's Deposit Account No. 500417, Order Number 086108-0180.

Respectfully submitted,

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